

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

REC'D 25 APR 2005

PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/IB2004/004020

International filing date (day/month/year)  
06.12.2004

Priority date (day/month/year)  
24.12.2003

International Patent Classification (IPC) or both national classification and IPC  
H01H13/70, G06F3/02, H01H13/06

Applicant  
PURCOCKS, Dale McPhee

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. IV Lack of unity of invention**

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1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☐ not paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
  - ☐ the parts relating to claims Nos.

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1,2,4-8,11, 14, 20,21
	No: Claims	3,9,10,12,13,15-19
Inventive step (IS)	Yes: Claims	1,2,4-8,14
	No: Claims	3,9,10-13,15-21
Industrial applicability (IA)	Yes: Claims	1-21
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item IV**

- 1 Reference is made to the following document:

D1 : WO 03/097322 A (PURCOCKS, DALE, MCPHEE) 27 November 2003  
(2003-11-27)

- 2 This Authority considers that there are two inventions covered by the claims indicated as follows:

- I: Claims 1-18, 20, 21 directed to a switch, a keyboard containing the same and a method for the manufacture thereof.  
II: Claim 19 directed to a dome member.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The prior art has been identified as document D1. The only common technical features between any of the independent claims 1, 3, 14 and 15 of the first invention, and independent claim 19 of the second invention are: "a dome member for use in a switch, said dome member being elastically deformable in use and having an annular rib extending from the base thereof".

This common technical features can not be considered as special technical features within the meaning of Rule 13.2 PCT, because they have been disclosed by D1. Therefore, there are no common special technical features. The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

**Re Item V.**

1 Furthermore, reference is made to the following documents:

D2 : US 5 939 690 A (YASUI ET AL.) 17 August 1999 (1999-08-17)  
D3 : DE 32 41 159 A1 (FA. GEORG SCHLEGEL; FA. GEORG SCHLEGEL,  
7941 DUERMENDINGEN, DE) 10 May 1984 (1984-05-10)

2 INVENTION I

2.1 INDEPENDENT CLAIM 3

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 3 is not new in the sense of Article 33(2) PCT.  
Document D1 discloses (see the passages and figures cited in the Search Report) a switch comprising a generally tubular housing (10), and a dome member (16) having an annular rib (16.1) extending from the base of said dome member, the dome member being disposed within said housing (10) and being elastically deformable in use, said housing (10) having an inner annular groove (12.1) for receiving said annular rib (16.1) of said dome member (16), wherein said housing (10) is provided with clamping means (12.2) which are movable from an open configuration in which said dome member can be introduced into said housing, and a sealed configuration in which they substantially cover the base of said dome member so as to clamp said annular rib (16.1) of said dome member within said annular groove (12.1) and create a fluid-tight seal between said housing and said dome member, at least a portion of the dome member being received within said housing with sufficient clearance such that it does not contact the inner wall of the housing when it is deformed in use (see Figures 31, 32, 35).

2.2 INDEPENDENT CLAIM 15

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 15 is not new in the sense of Article 33(2) PCT for the same reasons exposed in point 2.1.

2.3 DEPENDENT CLAIMS 9-13, 20, 21

Dependent claims 9, 10, 11, 13 and 20 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT). The reasons therefore are the following:

**Claims 9, 10, 12 and 13:** the features of these claims have been disclosed by D1.

**Claims 11, 20 and 21:** Document D2 discloses a similar switch and a similar keyboard having all the features of these claims. The skilled person would therefore regard it as a normal design option to include these features in the switch described in document D1 in order to solve the problem posed, namely improving the sealing between the housing and the dome member.

## 2.4 INDEPENDENT CLAIM 1

Document D1, which is considered to represent the most relevant state of the art, discloses (the references in parentheses applying to this document) a switch comprising a generally tubular housing (10), and a dome member (16) having an annular rib (16.1) extending from the base of said dome member, the dome member being disposed within said housing (10) and being elastically deformable in use, said housing (10) having an inner annular groove (12.1) for receiving said annular rib (16.1) of said dome member (16), wherein said housing (10) is provided with clamping means (12.2) which are movable from an open configuration in which said dome member can be introduced into said housing, and a sealed configuration in which they substantially cover the base of said dome member so as to clamp said annular rib (16.1) of said dome member within said annular groove (12.1) and create a fluid-tight seal between said housing and said dome member.

From this, the subject-matter of independent claim 1 differs in that the clamping means are a plurality of discrete tabs disposed circumferentially around an end thereof.

The subject-matter of claim 1 is therefore novel (Article 33(2) PCT)

The problem to be solved by the present invention may be regarded as **"providing a switch according to the prior art, wherein the clamping operation of the dome member is easier"**.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) because there is no hint in the prior art for this solution.

## 2.5 INDEPENDENT CLAIM 14

This claim also meets the requirements of the PCT with respect to novelty and inventive step (see reasons for claim 1 in point 2.4 of this written opinion).

## 2.6 DEPENDENT CLAIMS 2 and 4-8

The combination of the features of dependent claims 4-8 is neither known from, nor rendered obvious by, the available prior art. The reasons are as follows:

**Claim 2:** this claim is dependent on claim 1 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

**Claim 4:** see reasons for claim 1 in point 2.4 of this written opinion.

**Claims 5-8:** these claims are dependent on claims that meet the requirements of the PCT with respect to novelty and inventive step, and as such also meet those requirements.

## 3 INVENTION II

### INDEPENDENT CLAIM 19

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 19 is not new in the sense of Article 33(2) PCT. Document **D2** discloses (the references in parentheses applying to this document) a dome member (7) for use in a switch, said dome member (7) being elastically deformable in use and having an annular rib (7B) extending from the base thereof, said annular rib

being of a thickness greater than that of the side walls (7A) of said dome member, wherein a generally V-shaped groove defines the intersection between said annular rib and said side walls of said dome member.

Furthermore, document **D3** discloses (the references in parentheses applying to this document) a dome member (13) for use in a switch, said dome member (13) being elastically deformable in use and having an annular rib (15) extending from the base thereof, said annular rib being of a thickness greater than that of the side walls (the part of the dome member between the rib 15 and the tubular section 14) of said dome member, wherein a generally V-shaped groove defines the intersection between said annular rib and said side walls of said dome member.

**Re Item VIII.**

- 1 The application does not meet the requirements of Article 6 PCT, because claims 1, 3, 14, and 15 are not clear.

Although claims 1 and 3 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

The same remark can be made for claims 14 and 15.

In order to lift this objection, it would be advisable to delete one of claims 1 and 3, and one of the claims 14 and 15.

- 2 **INDEPENDENT CLAIMS 16-18**

Claims 16-18 contain reference to the drawings. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which



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is not the case here.

In order to lift this objection, it would be advisable to delete these claims.